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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/638,606
Filing Date: August 15, 2000
Appellant(s): BURNS ET AL.

Laurence C. Bergin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 19 July 2007 appealing from the Office action mailed 25 September 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 21, 23, 25, 27, 29, 31, 34-47.

Claims 19 and 20 withdrawn from consideration as not directed to the elected combination of species.

Claims 1-18, 22, 24, 26, 28, 30, 32 and 33 been canceled.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,139,588	Poole	8-1992
3,993,514	Pacanowsky et al.	11-1976

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21, 23, 25, 27, 29, 31, and 34-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poole (US 5,139,588; document E on the 892 accompanying the office action that is paper no. 10) in view of Pacanowsky et al. (US 3,993,514).

As to claims 21, 23, 25, 27, 29, 31, 34, and 40-47, Poole et al. ('588) discloses a vehicle occupant restraint system (abstract) comprising an inflatable air bag (inherent in abstract); a gas generator (col. 6 lines 39-65) for inflating the air bag; a nitrogen-containing, non azide gas generant ("tetrazole" of col. 5 lines 3-4) composition within the gas generator that forms nitrogen

oxide or dioxide upon combustion (from col. 8 lines 39-50). Not disclosed is a selective noncatalytic reducing compound, ammonium salt, is placed with the gas generant composition, wherein at least one mol of ammonium sulfate is added per mol of nitrogen oxide or nitrogen dioxide produced upon combustion of the gas generant composition. Pacanowsky et al, however, disclose the use of ammonium sulfate with a non-azide gas generant (col. 3 lines 1-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poole et al. ('588) by adding a non-catalytic reducing compound of ammonium sulfate as disclosed by Pacanowsky et al. so as to change to reduce the flame temperature (Pacanowsky et al. at col. 3 lines 1-8) and to have at least one mol of ammonium sulfate is added per mol of nitrogen oxide or nitrogen dioxide produced upon combustion of the gas generant composition depending upon the flame temperature desired.

As to claim 35, Poole et al. ('588) and Pacanowsky et al. further disclose compression molding (for example, col. 9, example 1 of Poole et al. ('588)) and NO_x gas produced upon combustion (col. 8, lines 39-47 of Poole et al. ('588)). Not disclosed are extrusion into a desirable shape, at least one mole of elemental N per mole of NOx, and the reducing compound discretely interspersed about the gas generant composition. Pacanowsky et al., however, discloses the reducing compound discretely interspersed about the gas generant composition (col. 4 lines 53-68). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Poole et al. ('588) as modified by Pacanowsky et al. by interspersing as disclosed by Pacanowsky et al. so as to optimize reaction rates and to extrude the composition into a desired shape so as to make the system more useable and to have at least one mole of elemental N per mole of NOx depending upon needs of the system.

As to claim 36, Poole et al. ('588) and Pacanowsky et al. further disclose tetrazole (col. 6 lines 39-46 of Poole et al. ('588)), alkaline earth metal lanthanide (col. 6 lines 47-51 of Poole et al. ('588)), a low temperature slag of clay (col. 6 lines 58-65 of Poole et al. ('588)). Not disclosed are extrusion into a desirable shape, at least one mole of elemental N per mole of NOx, and the reducing compound discretely interspersed about the gas generant composition. Pacanowsky et al., however, discloses the reducing compound discretely interspersed about the gas generant composition (col. 4 lines 53-68). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Poole et al. ('588) as modified by Pacanowsky et al. by interspersing as disclosed by Pacanowsky et al. so as to optimize reaction rates and to extrude the composition into a desired shape so as to make the system more useable and to have at least one mole of elemental N per mole of NOx depending upon needs of the system.

As to claims 37-39, Poole et al. ('588) and Pacanowsky et al. further disclose nitrogen oxide and nitrogen dioxide (from "oxides of nitrogen (NO_x)" of col. 2 lines 6-12 of Poole et al. ('588)). Not disclosed is the reducing compound proximate to and discretely interspersed about the gas generant composition. Pacanowsky et al., however, discloses the reducing compound discretely interspersed about the gas generant composition (col. 4 lines 53-68). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Poole et al. ('588) as modified by Pacanowsky et al. by interspersing as disclosed by Pacanowsky et al. so as to optimize reaction rates and to have the reducing compound proximate to the gas generant composition to add more reducing compound so as to further cool the system.

Response to Arguments

Applicant's arguments filed 26 June 2006 have been fully considered but they are not persuasive. Applicants' arguments are: (1) neither Poole et al. ('588) nor Pacanowsky et al. disclose a discrete selectively non-catalytic reducing (SNCR) agent, ammonium sulfate, and a separate gas generant composition; (Remarks page 1, 1st para.); and, (2) Pacanowsky et al. does not describe the use of ammonium sulfate as a discrete nitrogen compound but instead within the composition which would attenuate the affects of acceleration (Remarks page 10, 1st para.).

As to arguments (1) and (2), Examiner considers Pacanowsky et al. to disclose ammonium sulfate with a separate gas generation composition (see for example, col. 4 lines 63-68 of Pacanowsky et al.). The ammonium sulfate in either the Poole et al. ('588) composition or the Pacanowsky et al. composition would function, in part, as a selectively non-catalytic reducing (SNCR) agent because it is well decided that if a composition is physically the same, it must have the same properties (see MPEP 2112.01(II)). Pacanowsky et al. discloses that ammonium sulfate functions to both reduce the effect of acceleration on burn characteristics of a composition and to reduce flame temperature of the composition (Pacanowsky et al. at col. 3 lines 1-8). Examiner considers ammonium sulfate to have a third effect - acting as a discrete SNCR agent.

(10) Response to Argument

Applicants' argument is: A. Rejection under 35 USC § 103(a) as being unpatentable over Poole, US patent no. 5,139,588 in view of Pacanowsky et al. U.S. patent no. 3,993,514.

Applicant argues is that neither Poole nor Pacanowsky et al. disclose ("teach" for middle of page 15 of argument, for example) an SNCR compound within a gas generator in hetergeneous relation to a gas generant composition within the gas generator. Specifically, Applicants argue that neither Poole nor Pacanowsky et al. disclose the SNCR compound in a "heterogeneous" relation to the rest of the composition (from claim 21, lines 6-7; claim 23, lines 6-7; claim 25, lines 6-7; and, claim 34, lines 6-7; Brief at pages 15-19 and 34-36). Alternately, Applicants' argue that neither Poole nor Pacanowsky et al. disclose the SNCR compound in a "proximate," "separate," and "interspersed" relation to the rest of the composition (claim 25, lines 6-7; claim 27, lines 6-6; claim 29, lines 6-7; and, claim 31, lines 6-7; Brief at pages 20-33).

Examiner considers Pacanowsky et al. to disclose the SNCR compound (ammonium sulfate) to be either in a heterogeneous relation to the rest of the composition or in a proximate, separate, and interspersed relation to the rest of the composition. In general, the compounds in the composition of Pacanowsky et al. are finely divided particles (from col. 4 lines 63-68). Hence, the ammonium sulfate would be interspersed, because they are mixed (col. 4 lines 63-68), and separate because particles, by definition, are separate entities. As Applicants point out the compounds are "thoroughly mixed" at col. 4 line 68. However, "thoroughly mixed" has no objective standard. Therefore, a thoroughly mixed composition will have some, or different, level(s) of heterogeneity to it and still be considered thoroughly mixed. Since Pacanowsky et al.

anticipate differences in the final mixture from their use of the language "desired uniformity" at col. 5 lines 6-7), there will be some degree of heterogeneity in any thoroughly mixed composition.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jeffrey L. Gellner
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